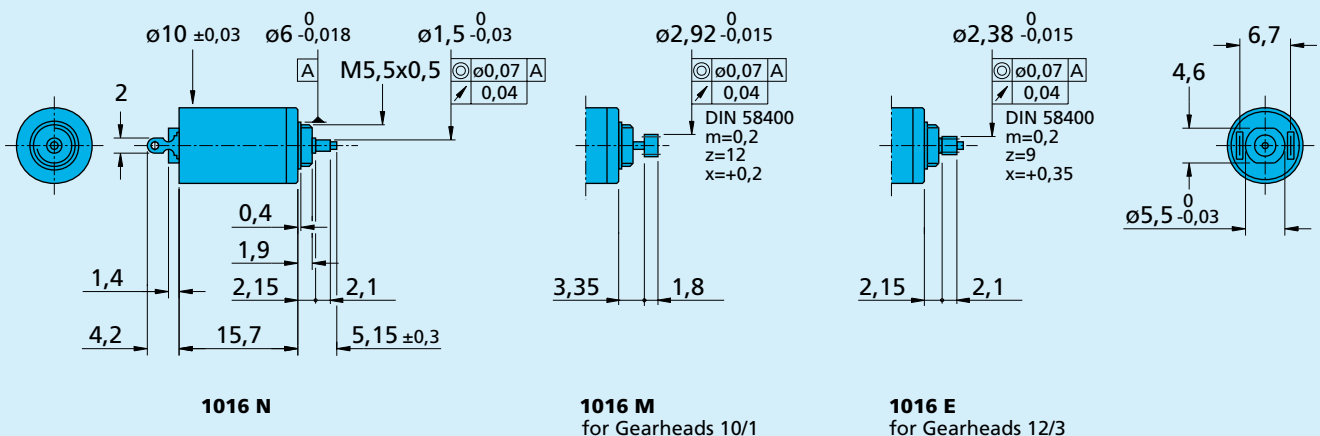


0,48 mNm

For combination with (overview on page 14-15)
 Gearheads:
 10/1, 12/3
 Encoders:
 30B

Series 1016 ... G

Recommended values - mathematically independent of each other						
27	Speed up to	$n_{le\ max.}$	13 000	13 000	13 000	rpm
28	Torque up to	$M_{le\ max.}$	0,48	0,48	0,48	mNm
29	Current up to (thermal limits)	$I_{le\ max.}$	0,260	0,170	0,080	A



Planetary Gearheads

0,1 Nm

For combination with (overview on page 14-15)
DC-Micromotors:
1016, 1024, 1219, 1224

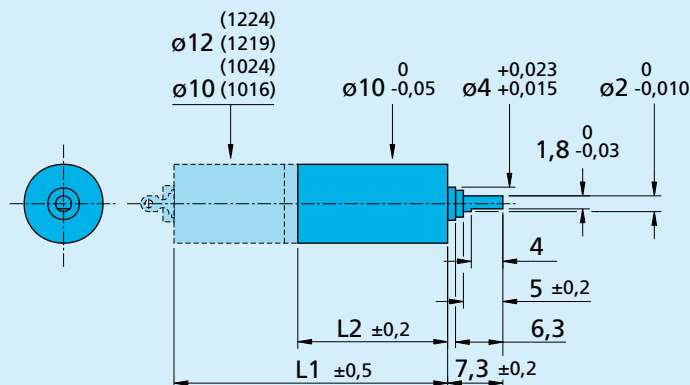
Series 10/1

	10/1	10/1 K
Housing material	metal	metal
Geartrain material	all steel	all steel
Recommended max. input speed for:		
– continuous operation	5 000 rpm	5 000 rpm
Backlash, at no-load	$\leq 3^\circ$	$\leq 3^\circ$
Bearings on output shaft	sintered sleeve bearings	preloaded ball bearings
Shaft load, max.:		
– radial (5 mm from mounting face)	$\leq 1 \text{ N}$	$\leq 7 \text{ N}$
– axial	$\leq 2 \text{ N}$	$\leq 5 \text{ N}^{1)}$
Shaft press fit force, max.	$\leq 10 \text{ N}$	$\leq 5 \text{ N}^{1)}$
Shaft play (on bearing output):		
– radial	$\leq 0,03 \text{ mm}$	$\leq 0,02 \text{ mm}$
– axial	$\leq 0,10 \text{ mm}$	$= 0 \text{ mm}^{1)}$
Operating temperature range	$-30 \dots +100^\circ\text{C}$	$-30 \dots +100^\circ\text{C}$

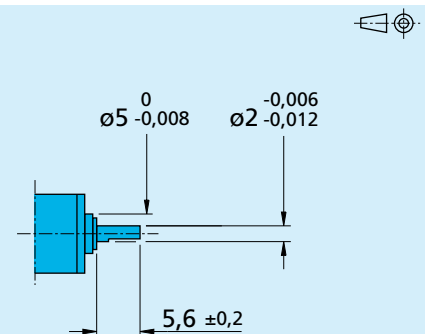
Specifications

reduction ratio	weight without motor	length without motor L2	length with motor				output torque		direction of rotation (reversible)	efficiency
			1016 M L1 mm	1024 M L1 mm	1219 M L1 mm	1224 M L1 mm	continuous operation M max. mNm	intermittent operation M max. mNm		
4:1	6 g	9,7	25,4	33,4	28,4	33,9	5	200	=	90
16:1	7	12,8	28,5	36,5	31,5	37,0	15	200	=	80
64:1	8	15,9	31,6	39,6	34,6	40,1	54	200	=	70
256:1	10	19,0	34,7	42,7	37,7	43,2	100	200	=	60
1 024:1	11	22,1	37,8	45,8	40,8	46,3	100	200	=	55
4 096:1	13	25,2	40,9	48,9	43,9	49,4	100	200	=	48

¹⁾ Limited by the preloaded ball bearings.
A higher axial load negates the preload.



10/1



10/1 K
L1, L2 = + 1

Encoders

Magnetic Encoders

Features:
 10 Lines per revolution
 2 Channels
 Digital output

Series 30B

30B			
Lines per revolution	N	10	
Signal output, square wave		2	channels
Supply voltage	V _{CC}	4,5 ... 5,5	V DC
Current consumption, typical (V _{CC} = 5 V DC)	I _{CC}	5	mA
Pulse width	P	180 ± 45	°e
Phase shift, channel A to B	Φ	90 ± 45	°e
Logic state width	S	90 ± 45	°e
Cycle	C	360 ± 30	°e
Signal rise/fall time, typical	tr/tf	5 / 0,2	µs
Frequency range ¹⁾	f	up to 7,2	kHz
Inertia of code disc	J	0,09	gcm ²
Operating temperature range		- 20 ... + 85	°C

¹⁾ Velocity (rpm) = f (Hz) x 60/N

Ordering information

Encoder type	number of channels	lines per revolution	in combination with DC-Micromotors
30B19	2	10	series 1016, 1024
30B20	2	10	series 1219, 1224
30B18	2	10	series 1336

Features

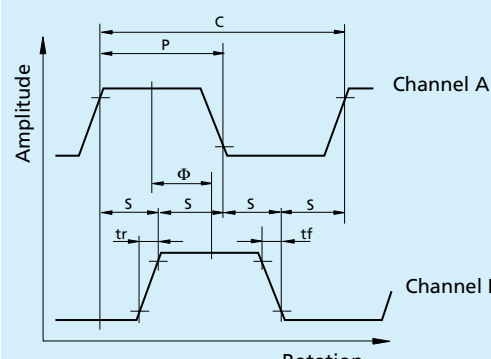
These incremental shaft encoders in combination with the FAULHABER DC-Micromotors are designed for indication and control of both, shaft velocity and direction of rotation as well as for positioning.

Solid state Hall sensors and a low inertia magnetic disc provide two channels with 90° phase shift.

The supply voltage for the encoder and the DC-Micromotor as well as the two channel output signals are interfaced with a 150 mm ribbon cable and a 10-pin connector.

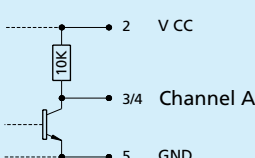
Details for the DC-Micromotors and suitable reduction gearheads are on separate catalogue pages.

Output signals / Circuit diagram / Connector information

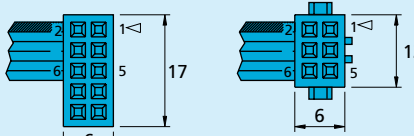


Output signals
with clockwise rotation as seen from the shaft end

Output circuit



Connectors



Standard 10P
(Panduit 050-010-455)

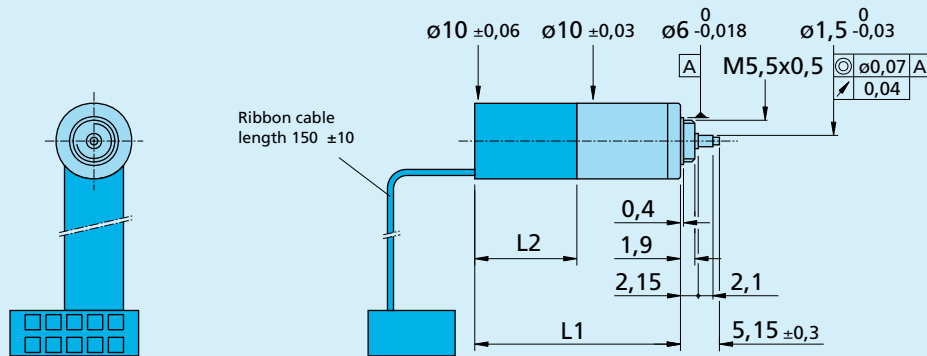
Option 6P
(FCI Quickie IDC 71601-106)

Pin Function

- 1 Motor +
- 2 V_{CC}
- 3 Channel A
- 4 Channel B
- 5 GND
- 6 Motor -
- 7 -
- 8 -
- 9 -
- 10 -

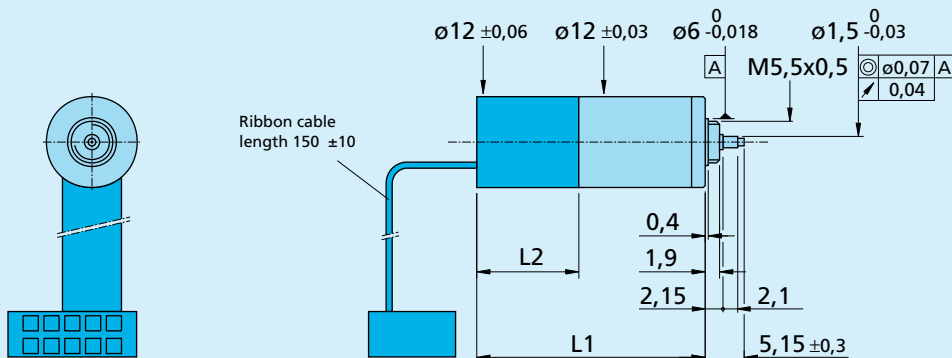
Ribbon cable
PVC - 6 conductors
0,09 mm² / 28 AWG

DC-Micromotors 1016 N ... G - K380, 1024 N ... S - K380 with Encoder 30B19



Motor type	L1	L2
1016	27,2	13,5
1024	35,2	13,5

DC-Micromotors 1219 N ... G - K380, 1224 N ... S - K380 with Encoder 30B20



Motor type	L1	L2
1219	30,2	13,5
1224	33,7	11,7

DC-Micromotor 1336 U ... C - 123 with Encoder 30B18

